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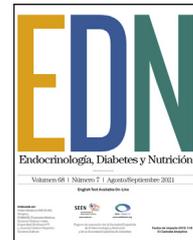


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LETTER TO THE EDITOR

Comment on the article

Determination of insulin-related lipohypertrophy frequency and risk factors in patients with diabetes

Comentario sobre el artículo Determinación de la frecuencia y los factores de riesgo de la lipohipertrofia relacionada con la insulina en pacientes con diabetes

Dear Editor,

In the online issue of *Endocrinología, Diabetes y Nutrición* dated 25 August 2021, Fatma NurKorkmaz and colleagues published an interesting and innovating article on ultrasound identification of non-visible, non-palpable insulin-related lipohypertrophies (LH) and described the correlation between such lesions and insulin-dose, total and LDL-cholesterol and coronary artery disease.¹

This finding is surprising as such a high rate of ultrasound-identified, otherwise undetectable insulin-related LH (i.e. 87%) had never been reported before. We appreciate the clinical relevance of such a report, which provides clues for several unexplained cases of altered insulin kinetics, absorption and release.

However, we feel it necessary to consider the following:

- 1) Lesion size gradually increases, making palpation-based LH identification possible at a particular moment when chronic complications also have a high probability of becoming apparent; the Authors did not find the latter except for coronary disease, which is the most common and earliest complication, suggesting they got their patients at a relatively early phase of the disease.^{2,3} On the other hand, it is unclear whether the hyperechoic lesions found in subjects with a 30 ± 7 kg/m² BMI classified as LH were real LH or amyloid/lipid aggregates.⁴ Only histology could answer that, and we hope the Authors will proceed along this path.
- 2) Most publications related to LH deal with patients with highly variable clinical features, identify LH using highly variable methods through healthcare professionals differing from one another in terms of specific competences.^{2,3} Therefore, we fully agree with the Authors that insulin type, treatment duration, number

of daily injections, and daily insulin dose strongly contribute to inconsistent results.⁵

- 3) However, in total contrast to the vast majority of other investigators publishing on this topic to date, who agree on the primary role of needle reuse and incorrect injection site rotation on LH onset,^{2,4} the Authors disregarded any possible link between the identified lesions and those two factors.⁵⁻⁷
- 4) The relationship between cholesterol and LH requires at least a tentative explanation, as the underlying pathophysiological mechanism is far from understood based on current knowledge.

Nevertheless, although further studies are still needed to confirm these results, the paper has the great merit of raising the problem of LH that even expert personnel cannot identify and paves the way to a new research field.

Authorship

All authors have made substantial contributions to all of the following: (1) the conception and design of the study, acquisition of data, analysis and interpretation of data; (2) drafting the article or revising it critically for important intellectual content; (3) final approval of the version to be submitted.

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Conflict of interest

The authors have no competing interests to declare.

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- Sandro Gentile^{a,b,*}, Giuseppina Guarino^a, Ersilia Satta^b, Felice Strollo^c
- ^a *Vanvitelli University, School of Medicine, Naples, Italy*
^b *Nefrocenter Research and Nyx Start-up, Naples, Italy*
^c *IRCCS San Raffaele Pisana, Rome, Italy*
- * Corresponding author.
E-mail address: s.gentile1949@gmail.com (S. Gentile).